

acteristic of lateral sclerosis. The normal or slightly exaggerated patella reflexes found in all cases of paralysis agitans may be due to an increase of the normal inhibitory function of the cord, owing to irritation of the fibres composing the pyramidal tracts by the presence of an increased amount of neuroglia.

A few cases of Parkinson's disease have been observed in which the only diagnostic symptom was the rigidity, the tremor never having been present. Such cases have been reported by Charcot, Berger, Wienskowitz, Buzzard, Hardy, Beavor, and Brown. Two such cases have been under my personal observation, one of which with autopsy is herein reported, it being the only case autopsied of paralysis agitans without tremor on record. At first it seems rather difficult to explain, according to my hypothesis, the absence of the tremor, if that be due to the same cause as the rigidity. The mode of the onset of the rigidity in the cases of paralysis agitans without tremor may be of assistance in solving this problem. In both of my cases (and this has been the rule in most of the cases of paralysis agitans without tremor) the first symptom noted by the patient was the rigidity, it starting as an increasing stiffness in the muscles of the arms, neck, and back, soon to be followed by a bending forward of the head, neck, and trunk, with a flexion of the arms and adduction of the legs, resulting in an attitude typical of Parkinson's disease. In this connection it may be interesting to note that in many of the cases of paralysis agitans where the rigidity has progressed rather rapidly the tremor gradually diminishes in intensity, and frequently becomes absent. It seems reasonable to suppose that in the cases of paralysis agitans without tremor, where the rigidity is of rather rapid development, that it is also associated with a progressive and rapid growth of neuroglia, the irritation of which in the posterior columns so increases the excitability of the reflex collaterals that the voluntary muscles are kept in a condition of constant contraction, the stronger ones overcoming the weaker, and thus producing the characteristic attitude with an absence of the tremor.

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PROGNOSIS IN HEART DISEASE.

BY BEVERLEY ROBINSON, M.D.,
OF NEW YORK.]

IN many special treatises on diseases of the heart, especially those which have been published in later years, the prognosis of heart disease is pronounced less grave than it was formerly. Be it understood, however, that distinctions are made, and very properly, between the prognosis of valvular defects, with and without complicating dilatation, or structural changes of heart muscle. What is true of special treatises is equally true of certain well-considered articles in current periodicals on prognosis of heart disease. This is well, since formerly, as we know, both for the public and many in our profession, heart disease once proclaimed was also immediately stated to be incurable. In a similar manner, if a death occurred suddenly or apparently in an unexplained manner, heart disease was frequently made to account for it. Sometimes there was really no reason for this belief, or, again, the evidence

of previous heart disease was quite insufficient; or, still further, while it was known, or understood, that the dead person had during life some "so-called" heart affection, it was not accurately determined what the nature of the cardiac trouble was. All this was a great pity, indeed, very damaging to the profession, because it was felt that our knowledge was very imperfect. At one time, for example, a diagnosis of heart disease was made, a serious prognosis confidently stated, and yet the patient lived on and enjoyed very good health for many long years, and was able without inconvenience to take part in all ordinary affairs of life. In other instances, it is true, a similar diagnosis and prognosis were made, and death, unfortunately, did occur very soon, sometimes suddenly or rapidly, sometimes after a period of several months or years of prolonged physical disability and suffering. Evidently error, ignorance, lack of fine discrimination and judgment, both in diagnosis and prognosis, were responsible for this situation, and it is high time that we should with increasing knowledge try to bring definiteness into many important questions. It is difficult to do so wholly, as is shown by the writings of a few, who even to-day are among our most advanced and prominent medical writers. But it is desirable to map out as well as possible some important relations or essential facts.

One thing is true, and may be properly admitted from the start, that heart disease in general is quite as amenable to treatment as diseases of other important organs of the body (Semple). Of course, if at any time the heart stops beating for any appreciable time, death inevitably follows; but this statement in no way controverts the previous one any more than to say that if the lungs do not expand death must surely follow. Prognosis, as we know, means foreknowledge of what will occur. It therefore takes in and declares the probable course and sequence of a particular condition of organ. Considered in this aspect it is indeed a part of diagnosis, and a very essential, not to say the most important part (Broadbent).

In former times, before Laennec introduced his wonderful discovery of mediate auscultation, knowledge of heart disease was very inaccurate, and many judgments were very much like guesswork. Even in Laennec's day, while the abnormal cardiac murmurs were recognized, their accurate pathological significance was imperfectly determined. Now, when diagnosis of heart disease is made, the well-informed physician should be able to tell in advance in many instances what will surely occur. This results from the close relationship which has been established between clinical observation during life and the results of post-mortem examinations. As a consequence, we can frequently warn relatives or friends of the patient when his condition is such as to inspire real solicitude. We can also judge when the heart's action is no longer sufficient fully to answer to the task required of it, and secondary symptoms

of its inadequacy have become manifest, that a fatal result will not long be delayed. Again, we know that in advanced aortic disease, for example, sudden death is always more or less imminent, and the fact should not be ignored when important family and personal affairs are in a way to be determined, and, perhaps, acted upon in view of this knowledge. On the other hand, we can feel confident at times that the importance of pathological bruits is much exaggerated, and this wrong estimate is merely due to the fact that their consequences are misstated or misinterpreted. Hence, we are fortunately prevented from causing undue anxiety or terror when there is really no reason to be specially apprehensive at the time the murmur is first recognized, or, later, provided an intelligent supervision and judicious care of the person affected be exercised. What is also true, however, and what should never be ignored, but make us additionally careful and watchful always, is the fact that many serious affections of the heart, where there is limited or diffuse structural degeneration, are not infrequently present, and yet they are never detected during life, and it is only at the necropsy that the fatal result is clearly explained and accounted for. Whenever, in auscultation of the heart, an abnormal murmur is discovered, it is a matter requiring careful consideration as to whether the patient should be informed of the fact, particularly if prior to this sometimes accidental discovery by the attending physician the patient never experienced any unpleasant symptoms from its presence. It is clear, then, that whilst it may be, and often is, an obvious duty to inform the nearest kin of the evidences of heart disease which exist in an individual where the probable consequences are serious or fatal, it is unwise to accentuate a situation and convey wrong impressions about a thing of little moment. Of course, it is very wrong, where the risks of a heart affection are grave or imminent, to withhold this knowledge from relatives or friends, and later, when the worst has occurred, then only to announce the truth which was very surely determined by us some time previously.

It may be now fully understood that to make an accurate prognosis of heart disease requires the highest wisdom, widest experience, and keenest insight of disease on the part of the clinician (Broadbent). It is this power of prognosis which wins confidence of patients more, perhaps, than any other quality; and whenever the future course of disease corresponds with the statements made by the practitioner, it tends in a marked degree to increase their fealty toward him, and strengthens their recognition that in him they have found their most trusty adviser. In a past generation, among those who have most advanced our knowledge and discrimination of heart disease, we should mention Bouillaud, Stokes, Hope, and Williams. To-day these men have been ably followed by Sansom, Balfour, and Broadbent. It is to the latter particularly that we are largely indebted, I believe, for much knowledge we now

have to base our prognosis on probabilities which shall render our foresight of the course and consequences of heart disease more intelligent and satisfactory than it has ever been prior to the present period. To those who are unfamiliar with his papers, I would direct careful attention to his lectures on "Prognosis in Valvular Disease of the Heart," delivered before the Harveian Society in 1884, and to the Lumleian Lecture at the Royal College of Physicians on "Prognosis in Structural Disease of the Heart," delivered in 1891. As he has pointed out, whatever makes one's prognosis of heart disease more accurate also improves our treatment.

In the first studies of Broadbent treatment was not, however, touched upon, and it is only at a later period in his able work on heart diseases, published in London in 1897, that this subject is given the attention it demands. This is true in its widest acceptation, for the reason that we know from frequent experience that many states of the heart are favorably influenced by treatment only when we consider fully all the bearing which disorders elsewhere in the economy may have upon them. We shall first consider the prognosis in valvular disease of the heart, as these are the affections we meet with most frequently, and, moreover, are those about which we have most accurate information. In these affections it is important to know the valve or orifice affected, as well as to know the stage of the disease. Thus, for example, if it be the aortic orifice which is involved, we know the danger of sudden death from this form of disease is only too real. Indeed, it has been stated by more than one eminent authority that it is the sole form of valvular disease in which a sudden fatal result is to be dreaded. To this I can scarcely subscribe, if I be permitted to recur to my personal experience.

Already several times I have had under my care in hospital wards patients who were under treatment for manifestations of cardiac inadequacy, functionally speaking, and who died suddenly with slight premonition of what would occur. It is true that in these instances the patients were being treated for symptoms more or less disturbing, and while we did not anticipate a fatal termination so suddenly, yet we certainly regarded the patients as sufferers. In aortic regurgitation it is different, since, in many instances, the patient seems very well indeed, able and willing to indulge in all kinds of recreation, or to fill an active business life with freedom and without distress. Under these circumstances sudden death may occur without warning, and it is this fact, indeed, which causes assuredly the popular dread which prevails about heart disease.

The question as to the stationary or progressive character of the heart lesion is also important. From this point of view, especially among old people, aortic regurgitation would appear to be especially dangerous, since the lesion is apt to advance rapidly, and compensatory hypertro-

phy rarely occur. Here, again, I have seen exceptions, and have under my care a notable one at the present time. Already my patient is an old man, and the aortic regurgitant lesion is very marked; still, in several years the lesion has advanced very slightly, if at all, and the cardiac hypertrophy is very considerable, and has proved in the main satisfactory. At present it is true my patient suffers from dyspnoea upon exertion, but this is not very severe, unless he overexerts himself, and at times it is due to his somewhat asthmatic tendency, and is more under the immediate result of his gouty tendency than of cardiac weakness from the valvular disease. Murmurs indicate, as a rule, the valve or orifice affected, but do not show the gravity or the state of the lesion. Damage to orifice or valve may be very considerable, and yet the murmur may be very low and soft. We may have, on the other hand, very loud and intense murmurs at the heart, and yet the cardiac lesion of orifice or valve may be very slight. The soft murmur may depend simply upon the weakness of the heart or its inability to produce a powerful vibratory noise. If the heart gains in strength and vigor the murmur may become more pronounced, prolonged, intense, and harsher. Whenever the murmur is post-systolic or post-diastolic it indicates that regurgitation is inadequate, according to Broadbent, and that the heart valves remain together only a very short time.

In many of these cases of systolic bruit at the apex, and especially in those which are not conducted into the left axilla, and are somewhat permanent in character, they are due to chronic dilatation of the heart which from the point of view of the prognosis is far more important than an *endocarditis* producing mitral regurgitation. Frequently the necropsy shows that the amount of *endocarditis* is small, and in any event does not satisfactorily account for the presence of great heart weakness, which existed previous to a fatal termination. It is the amount of dilatation, then, of the ventricular cavities, combined with more or less hypertrophy, which is the really important condition, and not the *endocarditis* which is present in greater or less degree.

I believe that what Lees says so well in speaking of children is equally true of adults: "Of course, the regurgitation at the mitral orifice produces increased tension in the left ventricular cavity as well as in the left auricular cavity, but we must never lose sight of the fact that weakness of the heart muscle makes this condition serious, and not the mere valvular insufficiency which precedes therefrom, or may be increased, indeed, somewhat by *endocardial* inflammation. In children both dilatation and *endocarditis* may be of rheumatic origin." The gravity of the case depends more upon the inflammatory condition of the heart muscle, especially in children, than it does upon the concomitant valvular affection. Moreover, the frequency of rheumatic carditis in children is greater than in adults. If carefully managed during and

subsequent to the acute rheumatic attack, a fatal result does not ordinarily follow, at least in the beginning. Later on, and before adult life is reached, we occasionally meet with children whose hearts are irrevocably damaged with disease of progressive nature, and do what we may, death surely occurs before adult life is attained. In the history of such cases we usually find several pronounced outbreaks of acute rheumatism. At the autopsy the valvular trouble may be slight, or pronounced, but in any event the heart muscle is degenerated as shown to the naked eye and with the microscope. If the mitral valve be affected, as it commonly is, the affection is rather that of insufficiency than stenosis. If pericarditis be present in children it is of more importance, as a rule, than the endocardial inflammation. Owing to the intimate relations of the visceral layer of the pericardium with the heart structure beneath, structural changes are apt to extend to and implicate considerably the heart muscle, either causing inflammation or degeneration of cardiac fibres. The gravity, as Lees observes, proceeds in these instances from this fact, and not from the presence of the effusion in the pericardium, which frequently is only very moderate in degree. We can readily understand, if the heart muscle become inflamed or degenerated, that the power of the heart action is diminished. With this diminution of power there ensue dilatation of heart cavities and thinning of heart walls. Hence, blood accumulates in the ventricles during diastole, and is not expelled as it should be. If nutrition and rest of the child be suitably and continuously provided for, genuine hypertrophy of heart walls may ultimately follow, and despite notable cardiac enlargement the heart may still be able to answer satisfactorily to its requirements. If the contrary be true, viz., if nutrition continue at a low ebb, and the young lad or girl be permitted to exercise or play imprudently, the hypertrophy which follows, if it does follow, is of the pseudo variety, which partakes, indeed, of a subacute or chronic inflammatory character. It is wise to bear in mind, as has been more than once insisted upon, how important it is to combat properly all acute or chronic manifestations of the rheumatic or other poisons, even though they do not appear at the time to have notably affected the heart so far as auscultation or percussion may reveal. I am not of the opinion of those who would insist upon large doses of the salicylates or other so-called anti-rheumatic remedies, because I do not believe that their apparent curative effects are always obtained without ultimate real injury to the patient. I do believe that the dietary should be carefully watched, the emunctories of the economy, skin, bowels, and kidneys kept in good functional order, and when the patient's general condition permits that a change inland from the seashore or from the city to the country be insisted upon. It is believed by some prominent writers that the differential diagnosis between acute

cardiac dilatation and pericardial effusion is readily made. In my experience this diagnosis is very difficult at times, and we are compelled to fall back upon what we know of the results of autopsies to justify us in our affirmations. Usually where the dilatation has come on rapidly, and where no pericardial friction is made out, the probabilities are more in favor of the dilatation. Again, we can usually distinguish the position and strength of the apex beat better with a dilated heart than we can when the pericardial sac is considerably distended. Weakness, irregularity, and rapidity or slowness of the pulse are favorable in my judgment to a diagnosis of dilatation. In chronic cases of pericarditis where the two layers have become extensively adherent, or adhesions have been formed between the pericardium and the pleura or mediastinum, these very adhesions prevent the heart from properly contracting, and thus tend greatly to increase its dilatation. In a greater degree even this is probably also true where the great vessels are much constricted by old adhesions.

In many instances of acute or chronic dilatation of the heart we have a mitral murmur, systolic as to time. If this murmur be conducted to the left axilla, doubtless it frequently means a certain amount of endocardial inflammation. In very many cases, however, it is a mere indication of the cardiac dilatation, and the mitral orifice is enlarged simply because the left ventricle is enlarged. Such instances are frequently encountered in general practice, and it is to their intelligent appreciation and treatment that curative results are due where, without this medical acumen, the case would go on indefinitely without a cure, or suddenly develop phenomena of heart failure, which are alarming for a time, and only benefited by a systematic rest cure and judicious management under the care of a wise physician and tactful trained nurse in the course of six months or longer. In the society girl we find one notable example of this kind of cardiac dilatation. What with lunches, afternoon teas, dinners, late parties, and balls, where dancing is carried on to the small hours, and bed only reached when the body is exhausted, no wonder that loving, anxious mothers come pleadingly to the family physician for relief. The girl is pale, anæmic, probably constipated, leucorrhœic, or has profuse menses; or else dysmenorrhœic or amenorrhœic; she is always more or less fagged-out and tired. She sleeps until ten or eleven o'clock in the forenoon, takes her breakfast in bed, swallows innumerable Bland's pills, because hæmoglobin is deficient and the corpuscles pale, even though the blood count is fairly normal. The urinary secretion is often colorless, of low specific gravity; no albumin, no sugar, no casts, but deficient elimination of urea. In older persons we fear interstitial nephritis. In young persons experience is consolatory, and we know rest, moderate massage, oxygen and iron, beef extracts and milk-punches between meals, and especially some

properly formulated cardiac pill with time produces good results, backed up with early hours, plenty of sleep, and change of air. These cases occur in the older woman, also the society drudge, who, after innumerable social engagements, matinées, and evening operas thrown in lavishly, gives way finally, gets filled up with stomachal and abdominal flatus, becomes dyspnoic on slight exertion, has heart palpitation, and blue lips and finger tips in the very acute forms, and is revived at times only with hot water bags, mustard plasters, and hypodermatics of digitalis, strychnine, and nitroglycerin. The urine is occasionally loaded with pink urates, and pains of neuralgic character in different parts of the body are no uncommon features; or, again, we have the overconscientious, self-sacrificing, ever tender, loving, and far too devoted mother; she it is who holds the baby at night when sick and peevish, and the nurse tired out; she it is who looks after the older boys and girls, when properly they should care for themselves and for her, with ceaseless solicitude. She buys her daughter's dresses, goes with her whenever she can to all social functions, manages her household, looks after the servants, pays the bills, runs the bank account, rarely if ever gets a good, genuine rest, although never so well deserved, and one day breaks down more or less completely, only to be supported temporarily with cocoa and strychnine, and strophanthus frequently repeated. I cannot emphasize all these cases too strongly. They are not overdrawn, but are absolutely true, and only when recognized and properly cared for does the medical practitioner get the beneficial results which he most desires. Cardiac dilatation, vulgarly termed heart failure, is the true diagnosis, and this condition should never be ignored.

In the cases to which I refer the prognosis is always graver where there have been previous rheumatic attacks and where the rheumatic poison still gives indubitable evidences of its continued presence, for in these cases we must dread, and properly so, the hidden effect of the toxin of this disease on the muscle of the heart. It often weakens it through structural changes, and yet the cardiac dilatation may not be always appreciable to our physical methods of exploration. The heart is weak in its action, the pulse very soft and depressible, and dyspnoic attacks show themselves upon very slight exertion or whenever the emotions are at all excited. Such patients at times suffer from skin eruptions, ambulant neuralgia, headaches, constipation, stomachal indigestion, and abdominal flatus. The starches are very inimical to them, as also all sweets, and diets should consist mainly of meat for many weeks, despite the fact that for lack of exercise and open air the urine at times is loaded with urates. Frequently repeated doses of calomel and soda, with a saline purge following, is the best and safest way to combat these untoward symptoms. I have been obliged, in addition, to

administer heart tonics by the rectum where the stomach and skin were both intolerant for a while.

Of course the endocardium may be inflamed in many of these cases, and we may discover a true endocardial bruit, which is caused by the roughening of both orifice and valves, mainly the mitral. But the endocardial bruit is not what should alarm us; it is the weakening of the heart muscle which takes place at the same time, and increases through leakage at the mitral orifice consequent upon dilatation, the intensity of the cardiac bruit, and is equally, or, more, indeed, the grave expression of the rheumatic poison. Again, as I have said before, there is no appreciable bruit at first near the apex, merely because heart action is too weak to cause it, and later, when the patient is doing fairly well, we hear the blowing murmur very readily. One of the difficult problems in practice is to determine accurately the presence or absence of the rheumatic poison, and it is only by the keen appreciation of the patient's previous history and the tentative effects of anti-rheumatic remedies that we may fairly obtain a conviction about it. The examination of the urine will not always prove it, as there may be a retention of excrementitious substances in the economy, which only repeated and most careful urinary analyses made under like conditions would determine. As to the symptoms, these are frequently of such indefinite character that we might easily be led astray. And yet sometimes the most powerful heart tonic is unquestionably the drug or drugs which eliminate the rheumatic poison from the system rapidly and without injuring the patient. In a certain number of cases I am confident that I have been of far more use and given greater relief to my patient with colchicin, salicin, or chloride of ammonium, and acetate of potash than I did by whipping up the heart action directly with strychnine and nitroglycerin.

The dulness of the right first intercostal space, to which Rotch has referred, does not seem to prove the existence of pericardial effusion as opposed to true dilatation of the heart cavities. More than once the hypodermatic needle has been used to determine accurately the presence of a serious effusion, and the result has been negative. The result of post-mortem examinations would also tend to show that in many similar cases the heart is simply enlarged and no pericardial effusion is present. Lees' and Broadbent's observations are especially corroborative of these facts.

The prognosis of heart disease is, of course, much influenced by ambient conditions and accidental circumstances. Wherever the cause producing secondary symptoms of heart disease is one which we have no power to change or modify, it is then very grave indeed. Where, however, there is present some condition which we can fairly hope to

eliminate by judicious care, then our confidence is much greater that we can help our patient very much. How often do we see an anæmic girl who suffers terribly from cardiac distress relieved greatly by iron, mountain air, and proper exercise? Or, again, if the aggravating cause be cold, over-fatigue, sudden shock—all these accidental circumstances may lose their pernicious influence with treatment and time. It has long been recognized that the mere intensity of a murmur is no indication as to the gravity of a cardiac lesion. We may have a very loud bruit, and yet the heart lesion is really slight. On the other hand, a very serious change of orifice or valve may be indicated by a very low bruit. In general it may be stated that it is the amount of hypertrophy or dilatation which marks the gravity of the murmur, and despite the fact that frequently the enlargement of the heart is also a protective power against secondary symptoms, which we most dread. Prognosis of heart disease is also affected by the stationary or progressive character of the lesion. As we know, this is a very difficult matter accurately to determine, and we can only judge of the one or other condition by the manifestation or not of secondary symptoms, such as pain, palpitations, and dyspnœa, not to speak of the physical evidences with which we are all too sadly familiar. Circumstances outside of the heart influence prognosis; these are age, sex, occupation, heredity, etc.

Heart disease is certainly graver in youth than it is in middle life. Structural defects of the heart muscle are not infrequently inherited. A laborious life, or one full of cares and anxieties, aggravates very much the prognosis, whereas a life of ease is productive of a stationary effect in the development of symptoms of heart disease. Serous effusions into the large cavities indicate gravity. This is greater with aortic than mitral disease. It is, also, of more serious import where the effusions come on insidiously than where they develop after a sudden shock or accident. It is probable, in many instances, that the mere presence of organic heart disease does not materially shorten life or interfere notably with its reasonable enjoyment, or with the fulfilment of one's duties and responsibilities. I have taken care of several old men and women who have unquestionably had mitral or aortic disease during a greater portion of their adult life, and who nevertheless lived to an advanced age. Moreover, not infrequently, they have been very little annoyed from their heart affection, and very rarely suffered from symptoms directly attributable to it. Even when such secondary symptoms did occur, through carelessness or undue exposure, by a short course of judicious treatment they were soon again enjoying their usual health. There is a proper application here to the conduct of insurance companies. Some of these companies refuse to take any cases of heart disease; others do so, but charge them a larger premium. Wherever there are no secondary symptoms of heart disease or evidences of disease of

other organs, it seems to be wisdom to accept such cases in the latter way as a proper business venture.

Cardiac enlargement, which in adolescent and adult life is most frequently under the dependence of obstructive or regurgitant disease of one or the other orifice, is often accompanied in old age with disease of the arteries. The arterial changes are sufficient of themselves, if not to cause intracardiac changes, at least to increase them when they have begun. Sometimes the myocardial degeneration connected with the increased size of the heart gives proof of its presence by distressing symptoms. Not infrequently, however, these changes exist for a shorter or longer period without manifesting their existence except by symptoms which indicate little or no gravity to the family physician. It is only when some really alarming symptoms declare themselves that anxiety of near relatives and friends is awakened. I have also known several cases in which sudden death occurred in which previously the patient had usually enjoyed a very fair degree of health and activity. Sometimes, it is true, that some cardiac pain, either spontaneous or occurring after moderate exertion, of a pseudo-anginal type, had occasionally been present, and yet no undue anxiety either of patient or of loved ones had developed. At the necropsy of such patients myocardial changes more or less extensive are readily made out, even with the naked eye. The coronary arteries are frequently inelastic, hard, calcareous, or atheromatous. In their immediate area of distribution, and particularly near their trunks and about the inter-ventricular septum, cardiac fibres are already indistinct, pale, and fatty. Usually such changes are accompanied by notable cardiac dilatation. It is probable that if the symptoms of these conditions prior to death be properly estimated much may be done to ameliorate the patient's condition, to relieve suffering, and doubtless at times to prolong life and one's usefulness very much. There are instances, however, of the senile heart with unquestionable enlargement which during life, and for many years, have never given rise to any unpleasant symptoms, and are only revealed in an accidental way when the patient is examined by a physician for some entirely different affection.

More or less precordial pain is one of the first symptoms which direct attention to the failing heart of the aged. This pain may be slight at first, and slowly increase, usually in an intermittent manner, or it may develop suddenly and with great intensity. In the latter instance, ordinarily, it follows overexertion, severe mental shock, or exposure. It is accompanied with marked intermittence or irregularity of both pulse and heart beats. These symptoms may be temporary or lasting. Whenever they come on suddenly, and where some accidental circumstance sufficiently explains their advent, we may be hopeful that with judicious care they will disappear sooner or later. Where, on the contrary,

they have developed slowly and somewhat insidiously, they are of serious augury, and usually indicate intracardiac changes, which will probably lead to the development of even graver symptoms. Wherever the lower limbs become œdematous and the serous cavities contain fluid in notable quantity it is very seldom that any therapeutic agents can ward off the approaching fatal termination for many months. We must insist, therefore, upon the great importance of watching carefully the first expression of cardiac inadequacy in old age, and guard against its rapid increase by such means as we have at our disposal. In this place I wish to direct attention to a formula which has long been known as the diuretic wine of the Hôtel Dieu, or Troussseau's wine. It is essentially composed of digitalis, squills, juniper berries, acetate of potash, and white wine. In dessert or tablespoonful doses, repeated from three to eight times in twenty-four hours, I have seen it occasionally effect temporary good results which were very remarkable. Indeed, I have known it occasionally to effect a cure which lasted several years, where the patient was seemingly before its use (and where many other combinations had been previously resorted to without avail) in a very critical condition. Cardiac palpitations and tremor cordis are symptoms of the senile heart which, although distressing, do not as a rule augment the gravity of prognosis. It is a singular fact that cardiac palpitations do not affect old people nearly so often as they do the young. Is this due to the greater impressionability of adolescents, and particularly young women? Tachycardia may be due to some poison, like alcohol, tobacco, tea, or coffee, affecting the pneumogastric and diminishing its restraining influence. In such instances a prolonged period of abstinence will usually effect a decided improvement, and not infrequently a permanent cure. There are instances, however, in which the nervous poison has become so deep seated that the distress and disability to the patient are never entirely gotten rid of. Of course, where the increased action of the heart is dependent upon structural changes, already clearly manifest in the heart itself, we cannot properly expect long-continued benefit from any remedial agents, although even here we should always be willing to recognize how imperfect our mere physical explorations may be, and how often our deductions therefrom are later on invalidated by the patient's evident improvement. I cannot emphasize too strongly the fact that we should never despair, even in advanced years, to secure benefit more or less lasting by the wise use of remedies. Not that we actually delay or prevent the advance of serious disease in these very grave cases, but we certainly do at times give most pronounced relief to the mere functional disablement, and this, after all, is the great rôle of the practitioner in cardiac therapeutics.

I am thoroughly persuaded that very many physicians err grievously

in their use of the so-called cardiac tonics. Very often they are given in too large doses; again, they are given in combinations which are unintelligent, mainly because they are "shot-gun" prescriptions, without a definite idea as to what they are doing; and, finally, because no proper appreciation is paid to the physiological effects of combining remedies which possibly neutralize one another's beneficial action. Small doses frequently repeated, simple remedies in a thoroughly assimilable form—these should be essential considerations in our prescribing. Whenever we endeavor too suddenly to give power to an already overtaxed heart the danger is evident that we often actually overstep the mark and cause directly a fatal termination, while with keener medical insight we should be really useful. The bearing of the preceding remarks upon prognosis is clear. Heart disease, not necessarily threatening, managed foolishly by a tyro or an ignoramus, may become very grave, and imminently so. Heart disease, similar in degree and character, managed by the wise, conservative practitioner, has a wholly different outlook. It is too much the fashion of our time in matters of medicine to believe that the same remedies given by two different men will effect the same result. They will do nothing of the sort. Take a very ordinary illustration, and yet one which strikes the mind forcibly, from a very different sphere—viz., the cook and cookery.

A French chef, with his savant gastronomic tastes and education, will produce from a few simple materials an excellent, appetizing, nourishing dish. An ignorant, self-satisfied, and hence daring cook will usually spoil and make utterly uneatable and most indigestible dishes from the very same viands. So it is with good and bad practitioners in affections of the heart. In the one case we see amelioration, great and enduring, perhaps, effected; under different care the downward path is rapid and certain. In instances where we have marked cardiac slowness the intracardiac changes are more frequent than where the heart action is unduly rapid. On this account this condition carries with it ordinarily a graver prognosis. In many instances, fortunately, the gouty dyscrasia seems measurably to affect the slowness of the heart beat, and by proper eliminative remedies we can often accomplish excellent results. I am confident torpidity of the liver in many such cases is a primary factor in this slow heart action. The portal circulation becomes clogged, and the more easily, no doubt, on account of interstitial changes which are present in the liver, just as they are in the kidneys, and are but a development of structural conditions that age produces almost of necessity.

Give minute doses of calomel and soda, gray powder, several times repeated in the course of a week or two, and soon everything which caused immediate anxiety is often greatly improved. For a long-continued course of treatment it is wisdom to abandon the mercurials, and

institute in their place frequent doses of podophillin, ipecac, soda, and rhubarb. After such course we shall often see senile hearts practically rejuvenated for a time at least, and a new lease of life and its enjoyment quietly entered upon. In certain examples, where the gouty tendency is clearly defined, and where, particularly, symptoms of angina may be present, I would insist upon the use of Contrexeville water. I esteem that the profession is under obligations to Dr. D'Estrées for his advocacy of this water, and already in my experience I have seen several cases in which the gouty condition has been favorably modified in a very striking manner by its continued use for many weeks. The elimination of uric acid from the economy by its action seems at times exceptionally great. In all cases of senile heart our prognosis should be carefully guarded, and, as Balfour says, we must shrink from dogmatism. If we make too positive statements as to the immediate outcome of the disease we are very liable to be mistaken. There are usually so many modifying and attendant factors to change influencing conditions that we should add extreme caution to our every assertion.

THE MANAGEMENT OF SURGICAL INJURIES TO THE URETERS.*

BY BEVERLY MACMONAGLE, M.D.,
OF SAN FRANCISCO.

ANIMAL experimentation on the ureters has been of great value in laying the foundation for the management of surgical ureteral injuries. The very small size of the dog's ureter, the difficulty with which it is handled surgically, and the frequent occurrence of sepsis, should, however, prevent us from drawing too unfavorable conclusions from the result of this work. Our choice of procedure in the future must be based upon the results obtained on man, and my own cases are reported to add, if possible, to the elucidation of this subject.

Early work on the ureter for the relief of uretero-vaginal and uretero-uterine fistulæ was done entirely by the vaginal route. We are all well acquainted with the classical operations as performed by Sims, Simon, Landau, Schaede, Pozzi, Bandel, Emmet, Dührssen and others.

In the following case of uretero-vaginal fistula I followed the excellent method advised and successfully performed by Kelly,¹ April 27, 1897:

CASE I.—Miss J. T., aged thirty-nine years. In December, 1896, I performed a vaginal hysterectomy for double pyosalpinx, using double clamps to control the vessels, and a gauze drain. The patient com-

* The complete paper will be found in the Transactions of the American Gynecological Society, vol. xxiv., 1899.

plained of pain in the right loin and down the course of the ureter after recovery from the ether. The urine was fair in amount and normal in appearance. Clamps were removed in forty-eight hours. At this time the patient was somewhat, but not entirely relieved. Gauze was removed on the fourth day. The patient still complained of pain as above. On the sixth day the urine began to flow through the vagina, and the pain was entirely relieved. A good recovery followed, but a urinary fistula remained; and by injecting sterilized milk and by the cystoscope it was found that the urine came from the right ureter through the vagina. Operation was undertaken on July 27, 1897, to turn the opening of the ureter into the bladder by the vaginal route.

A narrow strip was denuded on the posterior wall of the vagina and around the side, as close to the scar left by the vaginal hysterectomy and ureteral fistula as possible. A curved incision was then made, beginning at one end of the denudation on the right side and ending at the denudation on the left side. The convexity was toward the ureteral opening; the cut was curved through the vaginal wall and into the bladder. This made a flap turning toward the ureter. The concave edge of the incision was covered by a running stitch of No. 1 catgut, bringing the bladder mucosa to the vaginal mucosa.

The convex edge of the incision was stitched by interrupted silver-wire sutures to the denudation and to the sides and posterior wall of the vagina, eight stitches in all being inserted. The bladder was distended with boric-acid solution. No leakage occurred, and a gauze drain was placed in the vagina. Catheterization was practised every four hours, and the bladder was washed with boric-acid solution during the after-treatment.

On the fourth day there was pain from the spasmodic contraction of the bladder. Some clots were expelled through the urethra, and quite a brisk hemorrhage occurred. This was due to the giving way of the catgut stitch that was buried in the bladder and from rough washing of the bladder. A gentle current of hot boric-acid solution, kept up for four hours, controlled the hemorrhage, and the patient then made an uninterrupted recovery, with perfect control of the urine.

At the only visit to her after her discharge from the hospital she claimed to be perfectly comfortable. The vagina was very little shortened, and she could retain urine all night. She had then been at work for two months. She failed to keep her promise to return and undergo a cystoscopic examination.

Many operations have been devised to secure continuity of the ureter after injury resulting from surgical operations, which may be conveniently arranged under the following heads:

1. Invagination of the proximal into the distal end.
2. Transverse end-to-end anastomosis.
3. End-to-side anastomosis (Van Hook).
4. Oblique end-to-end anastomosis (Bovée).
5. Implantation into the bladder.
6. Implantation into the bowel. (See original paper.)
7. Crossed anastomosis—i. e., switching the ureter into its fellow of the opposite side.

These methods are adapted for the cases in which injury to the